

coupled, in that the network coupler couples the data symmetrically, differentially and inductively or capacitively into and/or out of the two lines (1,2), and in that the network coupler symmetrically terminates the two lines (1,2) ] having a first line (1) and a second line (2) for transmitting both data and energy, comprising:

a first primary coil (4; 13; 21; 32) and a second primary coil (5; 14; 22; 33), each having a first terminal and a second terminal, with said first terminals coupled to said first and second lines (1, 2) respectively and said second terminals interconnected at a power supply point (3; 23; 36) for coupling said energy;

a secondary coil (6; 15; 25; 34; 35) magnetically coupled with said primary coils (4; 13; 21; 32), (5; 14; 22; 33) for differentially coupling said data into and/or out of said first and second lines (1, 2);

wherein said first and second primary coils ( 4; 13; 21; 32), (5; 14; 22; 33) are formed in such a way that a current flowing through said power supply point (3; 23; 36) is divided into two equal currents flowing in said two lines (1, 2) of said network.

2. (Deleted)

3. (Deleted)

4. (Amended) A network coupler as claimed in claim [3] 1, characterized in that the two primary coils (4; 13; 21; 32), (5; 14; 22; 33) consist of the same material and have the same cross-section, length and number of turns.

7. (Amended) A network coupler as claimed in claim 1, characterized in that the primary coils are formed as metal strips (21, 22) which are [preferably] led crosswise through the core (24).

9. (Amended) A network user [with a network coupler as claimed in claim 1,]

comprising a network coupler used in a network having a first and a second line (1,2) for transmitting both data and energy, said network coupler comprising:

a first primary coil (4; 13; 21; 32) and a second primary coil (5; 14; 22; 33), each having a first terminal and a second terminal, with said first terminal coupled to said first and second lines (1, 2) respectively and said second terminal interconnected at a power supply point (3; 23; 36) for coupling said energy;

a secondary coil (6; 15; 25; 34; 35) magnetically coupled with said primary coils (4; 13; 21; 32), (5; 14; 22; 33) for differentially coupling said data into and/or out of said first and second lines (1, 2);

said first and second primary coils (4; 13; 21; 32), (5; 14; 22; 33) are formed in such a way that a current flowing through said power supply point (3; 23; 36) is divided into two equal currents flowing in said two lines (1, 2) of said network;

wherein said network user is characterized in that the data transferred or received by the network user in the network are coupled into or out of the two lines (1, 2) of the network by means of the network coupler, and in that the energy supply of the network user is ensured by means of the energy which is coupled out of the two lines (1,2) or the network by the network coupler and is made available at the power supply point (3; 23; 36).

11. (New) A network coupler as claimed in claim 1, wherein said first and second primary coils (4; 13; 21; 32), (5; 14; 22; 33) have identical resistance and impedance.